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### AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior listings of claims in this application.

1. -- 20 (Canceled)

21. (Previously Presented) A method for serializing a bulk virtual connection request in response to a request for provisioning of a virtual circuit connection for an end user in a virtual path that provides connectivity between the end user and an Internet service provider, comprising:

- obtaining a virtual circuit identifier associated with a next available virtual circuit connection;

- determining whether the virtual circuit identifier is close to an end of a range of virtual circuit identifiers that have been established;

- provisioning the virtual circuit connection for the end user if the circuit identifier is not too close to a maximum value of the end of the range of virtual circuit identifiers; and

- serializing sending of bulk virtual circuit connection requests to request provisioning a plurality of additional virtual circuit connections having an associated range of virtual circuit identifiers

- storing a virtual circuit identifier in a current virtual circuit identifier parameter, the current virtual circuit identified corresponding to a current virtual circuit that can be provisioned for an end user;

- storing a last virtual circuit identifier in a last virtual circuit identifier parameter, the last virtual circuit identifier corresponding to the maximum value circuit identifiers returned by a previous bulk virtual circuit connection request;

- storing a status of a previous request for a bulk virtual circuit connection in a status parameter;

- storing a delta threshold in a delta threshold parameter, the delta threshold indicating the point at which a new bulk virtual circuit connection request is to be sent to establish additional virtual circuit connections;

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storing a current time in a current time parameter;  
storing a pre-determined time threshold corresponding to maximum time duration in which a pending bulk virtual circuit connection request is expected to complete;  
determining whether the difference between the last virtual circuit identifier and the current virtual circuit parameter is greater than the delta threshold;  
wherein serializing comprises determining which one of the following condition (1) – (5) is applicable if the difference between the last virtual circuit identifier and the current virtual circuit parameter is not greater than the delta threshold:

- (1) the status parameter has a SUCCESS value and the difference between the last virtual circuit identifier and the current virtual circuit parameter is less than the delta threshold;
- (2) the status parameter has a FAIL value;
- (3) the status parameter has a SUCCESS value and the difference between the last virtual circuit identifier and the current virtual circuit parameter is greater than the delta threshold;
- (4) the status parameter has a IN\_PROCESS value and the difference between the current time and the start time is less than the time threshold;
- (5) the status parameter has a IN\_PROCESS value and the difference between the current time and the start time is greater than the time threshold; and

determining whether to send a bulk virtual circuit connection request in accordance with the determinations made in the determining whether the difference between the last virtual circuit identifier and the current virtual circuit parameter is greater than the delta threshold and the serializing.

22. (Previously Presented) The method of claim 21, further comprising provisioning the virtual circuit for the end user if the difference between the last virtual circuit identifier and the current virtual circuit parameter is greater than the delta threshold.

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23. (Previously Presented) The method of claim 22, further comprising sending a bulk virtual circuit request if one of conditions (1), (2) and (5) is satisfied.

24. (Canceled)

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